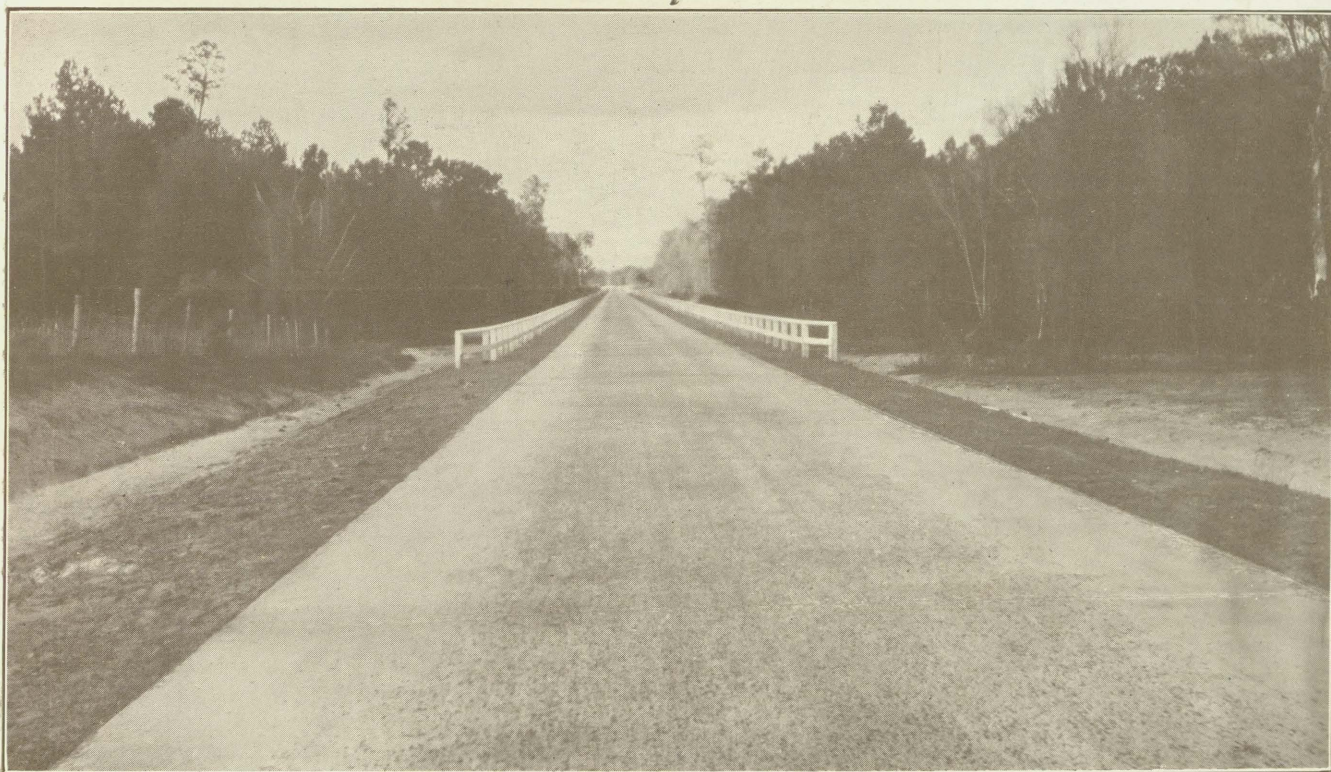


FLORIDA HIGHWAYS



A section of 18-foot Concrete Highway, showing Standard Type of Wooden Guard Rail

Vol. II

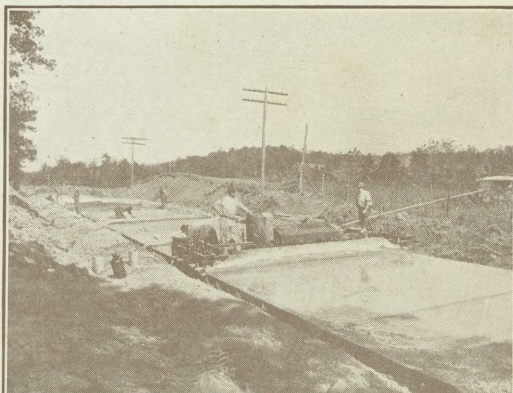
MAY, 1925

No. 6

PUBLISHED BY THE STATE ROAD DEPARTMENT

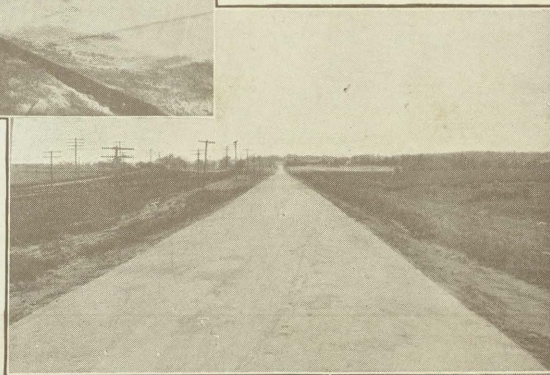
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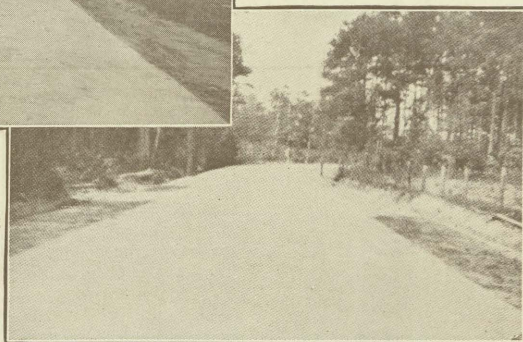


F. A. P. 100-A—17½ miles Slag Concrete paving in Chilton County on Birmingham-Montgomery Highway; laid in 1924 by J. R. & J. B. Miller, Baconton, Ga., contractors.

F. A. P. 174—3½ miles Slag Concrete paving on Atlanta to Newnan Highway; laid 1924 by Davis Construction Co., Atlanta.



F. A. P. 80—42240 sq. yds. of Slag Concrete paving in Glynn County, from Picric Acid Plant 4.2 miles north of Brunswick on line to Jesup, Ga., laid in 1921 by Pittman Construction Co., Atlanta.



Basic Slag Concrete Is Concrete at its best

Since *permanence* is the prime objective in concrete paving consider this: The tough, angular nature of

"ENSLEY" & "ALA CITY"
BASIC SLAG
CRUSHED & SCREENED

gives it unusual bonding qualities—permits the cement mortar to penetrate every pore. The union is perfect, permanent!

Twenty eight day tests of the designed Basic Slag mix for F. A. P. No. 100-A, shown above, averaged 4633 lbs. per sq. inch. This mix required LESS cement (State saved one-tenth barrel per cu. yd.) than has been specified for 3000 lbs. concrete in the past. A detailed report giving the essential facts has been prepared. Write for it!

Birmingham Slag Co.

Slag Headquarters for the South

ATLANTA THOMASVILLE BIRMINGHAM MONTGOMERY ORLANDO

1,192,860 Sq. Yds. Slag Concrete Pavement

ALABAMA

Completed Projects

Location	Square Yards
City of Birmingham (7 streets).....	35,000
Lehigh Portland Cement Company Plant	
Highways	5,600
Phoenix Portland Cement Company Plant	
Highways	6,325
City of Tuscaloosa (4 streets).....	30,000
Madison County (Huntsville).....	25,000
F. A. P. 95—Tuscaloosa County.....	10,500
Total completed	112,425

Uncompleted Projects

F. A. P. 100—Chilton County.....	187,250
F. A. P. 147—Jefferson County.....	73,571
Total uncompleted	260,821
ALABAMA TOTAL YARDAGE	373,246

GEORGIA

Completed Projects

F. A. P. 70—Morgan County	69,277
F. A. P. 91—Lowndes County	46,181
F. A. P. 4—Morgan County	43,459
F. A. P. 80—Glynn County	42,240
F. A. P. 88—Brooks County	36,960
F. A. P. 174—Campbell County	38,000
F. A. P. 316—Early County	8,270
City of Atlanta.....	200,000
Total completed	484,387

Uncompleted Projects

F. A. P. 389—Clayton County	98,127
F. A. P. 49 and 95—Mitchell County	105,600
City of Camilla	7,929
City of Atlanta	50,000
Total uncompleted	261,656
GEORGIA TOTAL YARDAGE	746,043

FLORIDA

Project No. 11, Escambia County (uncompleted) ..	73,571
GRAND TOTAL SQUARE YARDAGE...	1,192,860

FLORIDA HIGHWAYS



Vol. II

MAY, 1925

No. 6

Transactions of State Road Department in Tallahassee, April 13, 1925

The second quarterly meeting of the State Road Department was held in Tallahassee, with all the members, State Highway Engineer and Secretary present.

The minutes of the first quarterly meeting were read, and upon motion, duly approved.

The minutes of the Budget meeting held in Miami were read and, upon motion, duly approved.

The minutes of the special meeting held in Miami were read and, upon motion, duly approved.

The report of the Chairman was read and upon motion, ordered filed.

Project No. 47—St. Johns County

Upon motion of Mr. Schilling, the following resolution was adopted:

Whereas, bids were asked for clearing, grading, grubbing and drainage structures on a portion of Road No. 4 in St. Johns county, known as Project 47; and it being found that the bid submitted by Boone and Wester, of Punta Gorda, Florida, was lowest; Now, Therefore Be It

Resolved, That the Chairman is hereby authorized to enter into contract with said Boone and Wester for clearing, grubbing, grading and drainage structures on said Project 47, Road 4, St. Johns county.

Alachua County—Road No. 5

Upon motion of Capt. Hillman, seconded by Mr. Green, the following resolution was adopted:

Resolved, That the Chairman is hereby authorized to advertise for bids for clearing, grubbing, grading and drainage structures on Road No. 5 in Alachua county from High Springs to the Archer District line, through the High Springs-Newberry Districts, comprising Project 617, 5.17 miles, and Project 618, 10.89 miles; work to begin when the county has furnished right of way for said sections of road.

Alachua County—Road No. 13

Upon motion of Mr. Corry, seconded by Capt. Hillman, the following resolution was adopted:

Resolved, that the State Road Department hereby takes over Road No. 13 from Gainesville to the Bradford county line for maintenance.

Volusia County—Road No. 3

Upon motion of Mr. Schilling, seconded by Capt. Hillman, the following resolution was adopted:

Resolved, that the Chairman is hereby authorized to advertise for bids for rock base on Road No. 3 south of Deland, between Deland and the St. Johns River; work to begin when Volusia county has placed in the State Treasury to the credit of this Department, \$90 000 to apply on the construction of the above section of road.

Volusia County—Road No. 3

Upon motion of Capt. Hillman, seconded by Mr. Corry, the following resolution was adopted:

Resolved, that if Volusia county will pay into the State Treasury the sum of \$35 000 by June 1, 1925, the State Road Department will proceed to construct that portion of Road No. 3 which extends from DeLeon Springs south to the end of the brick road north of Deland on the direct route.

Clay County—Road No. 13

Upon motion of Capt. Hillman, seconded by Mr. Green, the following resolution was adopted:

Resolved, that the Chairman is hereby authorized to advertise for bids for putting rock base on approximately seven miles of Road No. 13 in Clay

county, from Maxville to the Bradford county line, known as Preject 607-B.

Clay County—Road No. 3

Upon motion of Mr. Green, seconded by Mr. Schilling, the following resolution was adopted:

Whereas, it has been found impracticable to follow Route B for the construction of Road No. 3 in Clay county across Fleming Island; Now, therefore, be it

Resolved, that the Department does hereby rescind the resolution adopted at the meeting of the Department held on March 10th at Miami, adopting Route B for said road, and the Department does hereby adopt Route A of the survey made by this Department for the location of Road 3, Clay county, across Fleming Island.

Clay County—Road No. 3

Upon motion of Mr. Green, seconded by Mr. Schilling, the following resolution was adopted:

Resolved, That the Chairman of the State Road Department be, and he is, hereby authorized and directed without further reference to this body, to prepare plans for the construction of a bridge across Doctor's Lake on State Road No. 3, between Orange Park and Green Cove Springs, Florida, and to make application to the War Department for the necessary approval.



Sheet Asphalt on Lime Rock Base, Federal Aid Project No. 37



A Typical Sand-Clay Road in West Florida

Highlands County—Road No. 8

Upon motion of Capt. Hillman, seconded by Mr. Green, the following resolution was adopted:

Resolved, That the Chairman is hereby authorized to advertise for bids for placing rock base on Road No. 8 between Lake Annie and Project 630, a distance of approximately thirteen miles, designated as Projects 629 and 647.

Gadsden County—Road No. 1

Upon motion of Capt. Hillman, seconded by Mr. Green, the following resolution was adopted:

Resolved, That the matter of location of Road No. 1 in Gadsden county through Mt. Pleasant be determined by the Chairman and State Highway En-

Manatee County—Road No. 5

Upon motion of Mr. Green, seconded by Mr. Schilling, the following resolution was adopted:

Resolved, That the Chairman be, and he is, hereby authorized to advertise for bids for hard surfacing approximately one mile of Road No. 5, between Project 570 and Sarasota county line.

Lake County—Road No. 2

Upon motion of Mr. Green, seconded by Mr. Schilling, the following resolution was adopted:

Resolved, That the Chairman is hereby authorized to advertise for bids for hard surfacing Road No. 2 in Lake county, from Leesburg to Helena Run.

Lake County—Road No. 2

Upon motion of Mr. Green, seconded by Mr. Schilling, the following resolution was adopted:

Resolved, That when Lake county has secured the right of way and has turned over to the State Road Department \$25,000 per mile, the Department will complete Road No. 2 from Silver Lake Fork to the Orange county line, near Mt. Dora.

City of White Springs, Hamilton County—Road No. 2

Upon motion of Capt. Hillman, seconded by Mr. Corry, the following resolution was adopted:

Whereas, the Town of White Springs desires the street over which Road No. 2 passes through the town to be paved an additional width over the standard width to be built by the State Road Department, the Town of White Springs to bear the additional cost; Now, therefore, be it

Resolved, That the State Road Department hereby agrees to pave Road No. 2 through the Town of White Springs, Hamilton county, under the terms and conditions set forth in a resolution adopted by



Florida Highways

Published Monthly

Official Publication of the State Road Department

PERSONNEL OF DEPARTMENT

H. B. PHILIPS, *Chairman*

W. J. HILLMAN

I. E. SCHILLING

E. P. GREEN

W. M. CORRY

ELLA CREARY THOMPSON, *Secretary*

PERSONNEL OF EMPLOYEES IN GENERAL CHARGE OF THE WORK OF THE DEPARTMENT

Engineering Division

J. L. Cresap.....State Highway Engineer
L. K. Cannon.....Ass't State Highway Engineer
G. L. Derrick.....Bridge Engineer
C. W. DeGinther.....Ass't Bridge Engineer
Harvey A. Hall.....Testing Engineer
F. W. Berry, Jr.....Office Engineer
John R. Stewart.....Supt. of Equipment
R. L. Bannerman.....Div. Engr. 1st Division
M. P. Philips.....Div. Engr. 2nd Division
R. J. Cassie.....Div. Engr. 3rd Division
L. B. Thrasher.....Div. Engr. 4th Division
A. W. Kinney.....Div. Engr. 5th Division

Accounting Division

S. L. Walters.....Auditor
Bettie V. Herring.....Bookkeeper
Jewell Smith Jones.....Bookkeeper
W. A. Williams.....Bookkeeper

This magazine is edited in the offices of the State Road Department, Tallahassee, and published monthly. Subscription rate, one dollar per year. Permission is granted to republish, with proper credit, the matter contained herein.

Application has been made for transmission through the mails as second-class matter.

B. A. Meginniss, Attorney for the Department,
Editor and Business Manager



OUR MAY ISSUE

We had intended to make the present issue a pictorial edition exclusively. Two reasons prompted us: First, we were fortunate in having all the cuts that went to make up the biennial report of the Department, which cuts were donated by this magazine and were used in the report without expense to the State. And second, because the Editor, while on leave of absence from the Department, is not enjoying the much-to-be-desired leisure which that term would seem to indicate, but is in fact working something like fourteen to eighteen hours per day as Chief Clerk of the House of Representatives of the Legislature of Florida.

Our plan, however, was abandoned because we were anxious to present to our readers and to the people of Florida at the earliest possible moment the recital of the transactions of the Department at the three meetings recently held, namely, the Budget meeting and Special meeting at Miami in March, and the regular quarterly meeting at Tallahassee on April 13th. And, having used this much material we decided also to use certain other copy, among which is our "Detour" page, which, if one may judge by the reports sent us, is, perhaps, our most popular feature.

It will be seen, at all events, that the magazine is more profusely illustrated than usual, and this is due, as indicated before, to the fact that we are reproducing certain of the pictures which appeared in the biennial report. We are making use of these cuts because, in our judgment, they show in the most graphic way the actual work which is being done by the Department, and their appearance in the magazine will result in their being seen by a greater number of our citizens. The report is, necessarily, of limited circulation, while FLORIDA HIGHWAYS reaches practically every good roads advocate in Florida.

Next month, we shall present the remainder of these views, together with such other photographs as we shall then have available.

TO BUILD 37 MILES AT COST OF \$75,000

Groveland, Fla.—Communities of Groveland, Mascotte and Okahumpka have voted to create special tax district No. 7 for the purpose of issuing \$750,000 of bonds to build roads in accordance with specifications of the State Road Department. Roads to be constructed include one from Helena Run through Okahumpka, Mascotte and Groveland to the Polk County line, and from Sumter County line east to Parker's Crossing, about three miles from Groveland.

Transaction of State Road Department in Tallahassee, April 13, 1925

(Continued from Page Three)

the Town Council of White Springs under date of April 11th, 1925, copy of which is on file in the office of the Department, and when the money to cover the additional width of pavement has been turned over to this Department.

Location of Road No. 1—Holmes County

Upon motion of Mr. Corry, seconded by Mr. Schilling, the following resolution was adopted:

Resolved, That the Department hereby adopts the location of Road No. 1 from Chipley through Bonifay on the north side of the Louisville and Nashville Railroad, provided Washington county places in the hands of the State Road Department the funds derived from a recent bond issue for use on State Road No. 1 through said county.

Palm Beach County—Road No. 4

Upon motion of Mr. Schilling, seconded by Mr. Green, the following resolution was adopted:

Resolved, That the Chairman be, and he is, hereby authorized and directed without further reference to this body, to prepare plans for the construction of a bridge across East Coast Canal, between Jupiter and West Palm Beach on State Road No. 4, and to make application to the War Department for the necessary approval.

BUDGET, 1925

Upon motion of Mr. Green, seconded by Mr. Corry, the following resolution was adopted:

Resolved, That the tentative Budget for 1925, as previously submitted, be, and it is hereby adopted, as the permanent Budget of this Department for 1925, with the following additions:

Road No. 2, Helena Run to Polk county line:
Road No. 2, Silver Lake Fork to Orange county line.

Road No. 2, Through Polk county.
Road No. 2-A, Through Polk county.
Road No. 3, St. Johns River to Orange county line.
Road No. 4, Flagler county line to Rose Bay.
Road No. 5, High Springs to Levy county line.
Road No. 5, Punta Gorda to Ft. Myers.
Road No. 27, Miami to Ft. Myers, via Marco.

Upon motion, duly carried, the expense accounts of the members were approved and ordered paid.

There being no further business, the meeting adjourned.

Minnesota automobiles this year will consume upwards of \$30,000,000 of gasoline. Cars consume a third less gasoline on good fine roads than on bad. Completion of the good roads plans in the State offers a potential saving of \$10,000,000 a year. Then there will be tire and other savings, too.—Carlton, (Minn.), Vidette.

In the ancient civilization of Peru streams were bridged and strong stone roads were built. Shade trees and sweet-scented herbs were set along the borders of the road, and at intervals, signs were erected for the direction of the travelers. Inns were built every twelve miles—a day's journey.—Colorado Highways.

Heroditus tells of a road built 4000 B. C. It was in Egypt and reached halfway across the African continent. It required 10,000 men working ten years to build a single half mile of it. The stone for the Pyramids was hauled over this road—S. C. Highway Bulletin.

"Politeness," so Henry Ward Beecher once remarked, "is like an air cushion—there may be nothing solid in it, but it eases the jolts wonderfully."

Contracts Awarded by State Road Department January 1, 1925-April 27, 1925

Contractor	Proj. No.	County	Roads Length Miles	Bridges Length Feet	Contract	Type
Atlantic Bridge Co.....	38-B	Escambia .....	....	1570	\$ 289,113.77	Conc. & Steel
R. H. H. Blackwell.....	45	Madison .....	....	910	124,902.27	Conc. & Steel
Langston Const. Co.....	534	Brevard	7.69	....	177,361.80	Rock Base
B. Booth & Co.....	46	Nassau	11.52	....	95,664.77	Grading
Pensacola Shipbuilding Co.	421	Nassau .....	....	560	233,094.18	Steel & Conc.
Luten Bridge Co.....	46	Nassau .....	....	....	52,150.60	Drain. Struct.
Luten Bridge Co.	581	Hillsboro .....	....	....	75,837.26	Drain. Struct.
Barnes & Smith.....	581	Hillsboro	12.10	....	240,237.78	Rock Base
Boone & Wester.....	47	St. Johns	14.96	....	142,934.86	C. G. G. & D.
Otis Hardin	647	Highlands	4.00	....	16,720.00	Grade
Total			50.27	3040	\$1,448,017.29	

Transactions at Budget Meeting of State Road Department, Miami, March 10, 1925

The second budget meeting of the State Road Department was held in Miami, March 10, 1925, with all the member, state highway engineer, assistant state highway engineer, attorney for the department, and secretary present.

The board proceeded at once with the matter of the budget, the reading of the minutes of the last regular meeting being dispensed with until the next regular quarterly meeting.

Representatives of the counties were heard in alphabetical order and their requests and recommendations were filed in writing, and these are now a part of the records of the department, and may be found in the files pertaining to the budget.

Adoption of the Proposed Budget

Upon motion of Mr. Corry, seconded by Mr. Schilling, the following resolution was adopted:

Resolved, That the final adoption of the 1925 budget be made at the April meeting of the department in Tallahassee.

There being no more matters pertaining to the budget, the department adjourned.

Pursuant to call, a special meeting of the State Road Department was held in Miami, Fla., March 10, 1925, at the City Hall, with all members present. J. L. Cresap, State Highway Engineer, L. K. Cannon, assistant state highway engineer; B. A. Meginniss, attorney for the department, and Ella Creary Thompson, secretary, were also in attendance.

The reading of the minutes of the last regular meeting was dispensed with until the next regular quarterly meeting.

The report of the chairman was read, and upon motion, ordered filed.

Dade County

Upon motion of Mr. Schilling, seconded by Mr. Green, the following resolution was unanimously adopted:

Whereas, Dade county has offered to this department the sum of \$125,000 to be used in the construc-



Surface-treated Macadam, Project No. 554, Brevard County



Concrete Pavement on State Road No. 4, along the Indian River

tion of State Road No. 27, known as the Tamiami Trail in said county, west of Miami.

Now, therefore, be it Resolved, That this department does hereby accept from said Dade county the said sum of \$125,000, and does agree to apply the same together with sufficient state funds to construct on said State Road No. 27, in Dade county, west of Miami, a rock base, surface-treated road, according to the standard specifications of this department.

Polk County—Road No. 2

Upon motion of Mr. Green, seconded by Mr. Corry, the following resolution was adopted:

Resolved, That the department does hereby recommend the routing of Road No. 2, in Polk county, from Polk City to Lakeland, shall be designated via Foxtown.

Clay County—Road No. 3

Upon motion of Captain Hillman, seconded by Mr. Corry, the following resolution was adopted:

Resolved, That the department does hereby recommend Line B of the survey made by this department for the location of Road No. 3 in Clay county, across Fleming Island, along St. Johns river, as near as practicable.

Road No. 1 Right of Way—Madison County

Upon motion of Mr. Schilling, seconded by Mr. Corry, the following resolution was adopted:

Whereas, The chairman and secretary of this department did on the 6th day of December, A. D. 1924, for and in behalf of this department, enter into a certain agreement with the Seaboard Air Line Railway Company for the crossing of said railway by State Road No. 1, being sixty-six feet wide and located at a point 2,540 feet, more or less, west of Mile Post 756 (new) as measured from Richmond, Va., and being near Greenville, in Madison county, Florida, all of which is more fully shown in executed counterpart of said agreement now on file with this department; and

Whereas, It was necessary and desirable that said agreement be entered into by this department with the railway company to the end of securing said right of way crossing.

Now, therefore, be it Resolved, by the members of the State Road Department in regular meeting assembled, at Miami, Dade County, Florida, this the 10th day of March, A.D. 1925, that the execution of said agreement in behalf of this department by its chairman and secretary be and the same is hereby ratified, confirmed and approved as fully and to the same extent as if all such acts had been done at and in a regular meeting of this department.

DeSoto County

Upon motion of Mr. Green, seconded by Mr. Schilling, the following resolution was adopted:



Convincing proof that the Natural Beauty of the State is not lost in the construction of high type Roads

Whereas, This department at its regular meeting, held at Tallahassee, January 16th, 1925, adopted a resolution in the following words and figures, to-wit:

DeSoto and Highlands Counties

“Resolved, That when DeSoto and Highlands counties, or either of them, shall turn over to the State Road Department \$122,000.00 to be expended in the construction of State Road No. 18, between Lake Annie and Dorr Field, the department will supplement the same (in accordance with its contract acknowledged as valid and binding at the October meeting of the department) with \$100,000.00 of State funds, to be used towards completing said section of road,

Be it further Resolved, That the department will finally complete said section of road if and when permitted by law so to do”; and

Whereas, It now appears that DeSoto county has available for the purpose mentioned in said resolution the sum of only \$117,000 instead of \$122,000, as appears in and by a resolution duly adopted by the Board of County Commissioners of DeSoto county on January 26, 1925, a certified copy whereof is heretofore attached;

Now, therefore, be it Resolved by the State Road Department of the State of Florida, That the said resolution adopted by the said department on January 16, 1925, be and the same is hereby amended so as to read as follows:

Resolved, That when DeSoto and Highlands counties, or either of them, shall turn over to the State Road Department \$117,000 to be expended in the construction of State Road No. 18, between Lake Annie and Dorr Field, the department will supplement the same (in accordance with its contract acknowledged as valid and binding at the October meeting of the department), with \$100,000 of state funds, to be used towards completing said section of road.

Be it further Resolved, That the department will finally complete said section of road if and when permitted by law so to do.

DeSoto County—Road No. 2

Upon motion of Mr. Green, seconded by Mr. Corry, the following resolution was adopted:

Resolved, That the department does hereby agree to take over for maintenance Road No. 2 through DeSoto county.

HARDEE COUNTY

Upon motion of Mr. Green, seconded by Mr. Schilling, the following resolution was adopted:

Resolved: That the Chairman be and he is hereby authorized to advertise for bids and let contract for the construction of rock base with surface treatment on that portion of Road No. 2 from DeSoto county line north to Zolfo, in Hardee county.

Sarasota County

Upon motion of Mr. Green, seconded by Mr. Corry, the following resolution was adopted:

Resolved: That upon the completion of the grading of Road No. 5 in Sarasota county, a contract be immediately let for surfacing same.

Sarasota County

Upon motion of Mr. Green, seconded by Capt. Hillman, the following resolution was adopted:

Whereas, this department has found and determined and does hereby find and determine that it is necessary, wise and expedient to secure by eminent domain the real estate hereinafter described for the purpose of a right of way for State Road No. 5, in Sarasota county, Florida, and

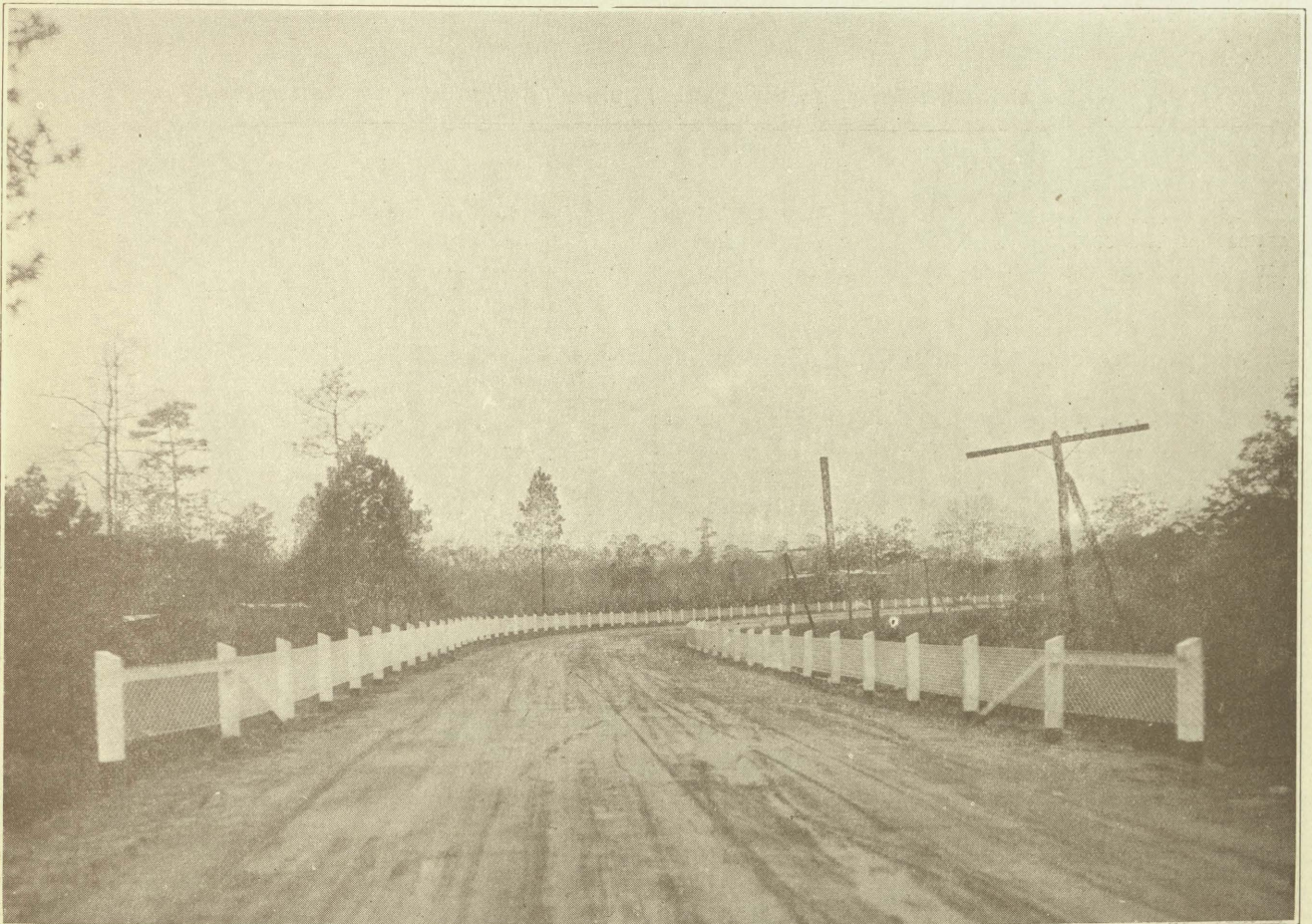
Whereas, there has been prepared and submitted a map or plat which shows in detail the property necessary to be acquired by eminent domain for such right of way for State Road No. 5, which said map or plat is attached hereto and marked "Exhibit A"; Now, therefore, be it

Resolved by the State Road Department that the said map or plat be and the same is hereby approved and adopted as the survey of this Department showing and designating the location of said Road No. 5, through the property hereinafter described; and

Be it Further Resolved, That the property hereinafter described is hereby authorized to be acquired

by the State Road Department for the uses and purposes hereinabove set forth, which said property designated as Tracts 1 and 2, is owned respectively by one M. E. Moore and one Mrs. D. W. Durden, and is particularly described as follows, to wit: Tract 1;

Beginning at the northeast corner of Lot No. 6 of Lot No. 75, Indian Beach subdivision, which is a part of Section 12, Township 36 south, Range 17 east, and running west 158.8 feet to a point of beginning, being on the east right of way line of State Road No. 5 as located by the State Road Department; thence south $21^{\circ} 27'$ east to the west line of Lot 5, 35.6 feet from the southwest corner of said Lot 5; thence continuing south $21^{\circ} 27'$ east across Lots 5, 33, 34, 35, 36, 37, 38, 39 and 40, to a point 520 feet south of the northeast corner of Lot 6 above mentioned; thence south 223 feet on the east line of Lots 40, 41, 42, 43, 44 and 45, 2.9 feet south of the northeast corner of Lot 45, which point is on the west right of way line of State Road No. 5; thence north $21^{\circ} 27'$ west through Lots 45, 44, 43, 42, 41, 40, 39, 38, 37 and 36 to a point on the west line of Lot 36, 21.0 feet from the southwest corner thereof; thence continuing north $21^{\circ} 27'$ west to the east line of Lot 21, which point is 161.9 feet south of the northeast corner of Lot 4; thence north along the east line of Lots 21, 20 and 4, a distance of 161.9 feet to a point; thence east 18.8 feet to the point of beginning; being the property of M. E. Moore.



One type of guard rail used by the Department on dangerous fills



View showing approach to Safety Grade Crossing constructed by the Department

Tract 2

Beginning at a point which is the southwest corner of the east 500 feet, of the north 88 feet of the south 176 feet of Lot 2, Block "A" Whitaker subdivision, of the northeast quarter of the northeast quarter of Section 13, Township 36, south Range 17 east; thence east 45.6 to a point of beginning, being on the west right of way line of State Road No. 5 as located by the State Road Department; thence east 34.5 feet to survey Station 178+27 and continuing east 34.5 feet to the east right of way line; thence north $21^{\circ} 27'$ west 91.5 feet; thence east 34.5 feet to survey Station 177+35; thence continuing east 23.5 feet to a point; thence due south 33.0 feet to the west right of way line; thence south $21^{\circ} 27'$ east along the west right of way line 57.0 feet to the point of beginning, being the property of Mrs. D. W. Durden.

The estate in said property hereby authorized to be acquired is an estate in absolute fee simple.

Be it Further Resolved, That all proper and necessary proceedings for the acquiring of the above described property by such eminent domain are hereby authorized and the Chairman of the State Road Department and its attorney are hereby authorized to prepare and sign all necessary pleadings and affidavits, and to take all necessary steps and actions required by the statutes of the State of Florida.

Highlands County—Road No. 8

Upon motion of Mr. Schilling, seconded by Mr. Green, the following resolution was adopted:

Resolved, That the State Highway Engineer is hereby instructed to proceed at once with the plans and specifications for the construction of nine miles of Road No. 8, in Highlands county, between Lake Annie and Kissimmee River.

Jackson County

Upon motion of Mr. Corry, seconded by Mr. Green, the following resolution was adopted:

Resolved, That the chairman is hereby authorized to enter into an agreement with the Board of County Commissioners of Jackson county for the construction of Road No. 6 between the Calhoun county line and Road No. 1 east of Marianna.

Road No. 1—Gadsden-Jackson, Washington-Okaloosa Counties

Upon motion of Capt. Hillman, seconded by Mr. Corry, the following resolution was adopted:

Resolved, That the chairman is hereby instructed to advertise for bids as soon as plans are prepared and right of way secured for the construction of a sand clay road on these sections of Road No. 1: between Quincy and the Apalachicola River; between Cottondale and Caryville, and ten miles in Okaloosa county beginning at Milligan and running east; these sections of Road No. 1 being in Gadsden, Jack-

son, Washington and Okaloosa counties, respectively.

Brevard County—Road No. 22

Upon motion of Mr. Schilling, seconded by Mr. Corry, the following resolution was adopted:

Resolved, That the chairman and attorney are requested to investigate and report at the April meeting if the Department is legally authorized to extend any aid to Brevard county in the construction of the uncompleted portion of State Road No. 22 in that county.

Lake County—Road No. 2

Upon motion of Mr. Green, seconded by Mr. Schilling, the following resolution was adopted:

Whereas, Lake county has \$20,000 per mile to turn over to the State Road Department to aid in building Road No. 2 from Helena Run to the Polk county line; now, therefore, be it

Resolved, That when Lake county has deposited the sum of \$20,000 per mile in the state treasury and furnished right of way as surveyed and located by the State Road Department, the department will let a contract for the construction of said road.

Putnam County—Road No. 14

Upon motion of Mr. Schilling, seconded by Mr. Green, the following resolution was adopted:

Whereas, Road No. 14 forms a part of the Federal Seven Per Cent System of Florida; and

Whereas, The State Road Department is desirous of obtaining Federal funds to aid in the construction

of that portion of Road No. 14 from Palatka to the Alachua county line in Putnam county; now, therefore, be it

Resolved, That the chairman is hereby authorized to submit plans and specifications to the Bureau of Public Roads, and make application for Federal aid for said project; and the Department does hereby pledge that necessary funds will be provided by said department for meeting Federal aid on said proposed Federal aid project; and be it further

Resolved, That the state highway engineer be and he is hereby directed to commence the construction of said road as soon as all necessary plans are completed.

Project 534

Upon motion of Mr. Schilling, seconded by Mr. Corry, the following resolution was adopted:

Resolved, That the action of the Chairman in awarding contract to the Langston Construction Company, of Titusville, Florida, for the construction of a lime rock base on Road No. 24, Brevard county, from St. John River to Osceola county line, known as Project 534, is hereby confirmed and ratified.

Project 421—Road No. 3

Upon motion of Mr. Schilling, seconded by Mr. Green, the following resolution was adopted:

Resolved, That the action of the chairman in awarding contract to Pensacola Shipbuilding Company, Pensacola, Fla., for the construction of St.



Federal Ail Project No. 13, Orange County, showing Curb and Gutter Section

Mary's River bridge, Nassau county, known as Project 421, is hereby confirmed and ratified.

Project 46—Road 3

Upon motion of Mr. Schilling, seconded by Mr. Green, the following resolution was adopted:

Whereas, Bids were asked for the construction of a portion of Road No. 3, in Nassau county, known as Project 46, and it being found that the bid submitted by B. Booth & Company, of Green Cove Springs, Fla., was lowest; now, therefore, be it

Resolved, That the chairman is hereby authorized to enter into contract with said B. Booth & Company for the clearing, grubbing and grading of twelve miles of Road No. 3, Nassau county, known as Project 46.

Project 46—Road 3

Upon motion of Mr. Schilling, seconded by Mr. Green, the following resolution was adopted:

Whereas, Bids were asked for the construction of drainage structures on that portion of Road No. 3 in Nassau county, known as Project 46, and it being found that the bid submitted by the Luten Bridge Company, York, Pa., was lowest; now, therefore, be it

Resolved, That the chairman is hereby authorized to enter into contract with the Luten Bridge Company for the drainage structures on Project 46, Road 3, Nassau county.

Project 581—Road 5

Upon motion of Mr. Green, seconded by Mr. Schilling, the following resolution was adopted:

Whereas, Bids were asked for the construction of twelve miles of Road No. 5, in Hillsborough county, known as Project 581, and it being found that the bid submitted by Barnes & Smith, Elfers, Fla., for clearing, grubbing, grading and rock base, was lowest; now, therefore, be it

Resolved, That the chairman is hereby authorized to enter into contract with said Barnes & Smith for clearing, grubbing, grading and rock base of Project 581, Road 5, Hillsborough county.

Project 581—Road 5

Upon motion of Mr. Green, seconded by Mr. Schilling, the following resolution was adopted:

Whereas, Bids were asked for the construction of twelve miles of Road No. 5, in Hillsborough county, known as Project 581, and it being found that the bid submitted by the Luten Bridge Company, York, Pa., was lowest for drainage structures; now, therefore, be it

Resolved, That the chairman is hereby authorized to enter into contract with the Luten Bridge Company for the drainage structures on Project 581, Road No. 5, Hillsborough county.

Amendatory Legislation Affecting State Road System

Upon motion of Mr. Corry, seconded by Mr. Green, the following resolution was unanimously adopted:

Whereas, The Legislature of 1923 in and by Chapter 9311, Laws of Florida, declared, designated and established a system of state roads; and

Whereas, In and by said chapter, the location of said roads was established and fixed between certain cities, towns, villages or control points therein named; and

Whereas, Insofar as the said system covers and

includes the Federal Seven Per Cent Highway System, there are several instances where the location thereof differs from and conflicts with the location of said respective roads as approved by the Federal Bureau of Public Roads; and

Whereas, It is impossible for this department to secure Federal aid on the several sections of roads where such conflicts exist until such differences in location have been reconciled; now, therefore, be it

Resolved, by the State Road Department of the State of Florida, That the Legislature of 1925 be and it is hereby requested to enact such amendatory legislation as may be necessary to make the State Road System coincide with and conform to the location of the said roads as approved by the United States Bureau of Public Roads, insofar as the same covers the Federal Seven Per Cent System.

Be it further Resolved, That the chairman and state highway engineer be and they are hereby requested to transmit to the appropriate committees of the Senate and House all information and data in their hands relating to such conflicts wherever the same occur.

Pinellas County

Upon motion of Mr. Green, seconded by Mr. Corry, the following resolution was adopted:

Whereas, This department has received a cordial invitation from the Board of County Commissioners of Pinellas county to visit and hold a meeting of the Department in that county in the near future; and

Whereas, the members of the Department deeply appreciate this cordial invitation and regret that it is impossible to accept the same at this time; now, therefore, be it

Resolved, That the sincere thanks of the Department be and the same are hereby extended to the Board of County Commissioners of Pinellas county with the hope that the Department may be permitted to accept the same for a later date.

Dade County

Upon motion of Mr. Schilling, seconded by Mr. Green, the following resolution was adopted:

Whereas, this Department has found and determined and does hereby find and determine that it is necessary, wise and expedient to acquire by eminent domain the real estate hereinafter described for the purpose of a right of way for State Road No. 4 in Dade county, Florida, between the Broward county line and Miami; and

Whereas, there has been prepared and submitted a map or plat which shows in detail the property necessary to be acquired by eminent domain for such right of way for State Road No. 4, which said map or plat is attached hereto and marked "Exhibit A";

Now, Therefore, Be it Resolved by the State Road Department that the said map or plat be and the same is hereby approved and adopted as the survey of this Department showing and designating the location of said Road No. 4 through the property hereinafter described.

Be it Further Resolved, That that property hereinafter described is hereby authorized to be acquired by the State Road Department for the uses and purposes hereinabove set forth, which said property is owned and occupied by Maule Ojus Rock Company

Our Park Road Programme

An Editorial in Western Highway Builder

A new highway improvement program of the first magnitude, involving the expenditure of \$2,500,000 a year for a period of at least three years confronts the construction industry of the West. The Congress has made available the first of a series of appropriations for the improvement of roads within the national parks and it is believed development work will be well started this year.

The atrocious condition of roads in these public playgrounds has been the subject of warranted anathema and execration at the hand of every citi-

avenues of access to these remarkable places.

To the credit of these States, let it be said, that excellent gateway roads to the parks have been completed, are under construction or are planned for future development. It is devoutly hoped that the Federal Government will expedite its construction program that these gateway roads may connect with similarly improved highways within the parks themselves in the near future.

Supervision of construction activities doubtless will fall to the lot of the Bureau of Public Roads,



View of Sheet Asphalt Pavement on State Road No. 2, South of Gainesville, in Alachua County

zen who has journeyed over them. Excessively narrow, poorly located, built with heavy gradients and sharp curves, and only indifferently maintained—all the evils of the improperly designed highway—have been theirs. True enough it is that national park roads have been the product of evolution from, in most cases, rude wagon trails, but their genesis is no excuse for their present insuperable state.

The Federal Government for years has blithely assessed the hardy adventurers who essayed a trip to the parks a varying toll, and only now has come to the realization that it has an obligation to the visitor to provide safe, comfortable and serviceable

the logical agency to administer this program of highway improvement. The selection of the Bureau to design the desired roads will be a guaranty that they will be adequately built to serve the traffic, for the Bureau's fault in road design, if one be stipulated, is that it builded "not unwisely but too well." Between quality and cost of road improvement, I grant it the honor of never comprising.

Year after year traffic to the parks will increase and a speedy improvement of existing roads and the construction of new ones is necessary if motorists who pay their tolls to these natural wonderlands are to be adequately accommodated

P. T. H.

Toll Bridges

The old toll bridge, which long since should have ceased to be more than a gloomy memory of by-gone days—days when Florida was struggling with a multiplicity of trying problems with little material at hand with which to work out and provide a source of public revenue, should now be discontinued. It is time that these obstacles in the path of progress and modern development should be eliminated for all time. No community can hope to attain a marked degree of modern development with such a millstone attached to its advancement; a public nuisance and ever-present provocation in the highway of better things. That public sentiment is against a continuance of this practice is indicated in a unique manner by a citizen of Daytona, where a vast harvest of tolls have been collected throughout all the years dating from the completion of the first span across the St. Johns. Mr. Wade H. Reed, one of the public-spirited and progressive citizens of Daytona, recently bought and paid for a full-page advertisement in one of the local papers in which to present facts calculated to arouse some definite action. In concluding his advertisement article, Mr. Reed says: "I have been patiently waiting for the past eleven years for free bridges as the first progressive step to building a larger city here, and I have waited in vain, with no brighter prospects for the immediate future. Men, let's get together and vote on the bridge question, and show the world we are not dead from the neck upward." Let every community throughout the length and breadth of Florida do likewise. What is true of the disagreeable situation in which Daytona is involved in this respect is equally true of every other community where the "passing of the buck" is indulged in by continuing to maintain the toll-bridge nuisance. The toll-bridge soft-job graft is passe and constitutes the worst possible "first impression" to our countless army of visitors. Kill the toll bridge now.—The Florida Sun.

Rural Roads

There were 2,941,294 miles of public roads in the United States on January 1, 1922. Of the total road mileage, 387,760 miles had been improved with some form of surfacing such as sand-clay, gravel, macadam, or pavement when the year 1922 began.

The total road mileage is sufficient to encircle the earth at the equator 118 times while the surfaced mileage was sufficient to gridiron the United States with 75 east and west routes extending from ocean to ocean and an equal number of north and south routes extending from border to border. Since 1921 surfaced mileage has been built at a rate of between thirty and forty miles per year of which an undetermined portion has been in the nature of re-surfacing of roads previously surfaced.

The figures constitute the only complete report covering the entire road work of the country for any recent year and will be valuable not only in studying the present highway situation but for the future as a record highway improvement progress.—The Florida Sun.

One of our great educational cross-word puzzles called the other day for a word in three letters meaning where you sit on Sunday, and the neighbor women of the older set think it's pew, while those of the middle-aged and younger sets feel sure it must be car.—Columbus Ohio State Journal.

By the time cotton gets all ginned up, it can't tell whether it's going to be a bottle of olive oil, a pail of lard, a pat of butter or a pair of silk stockings.—Little Rock Arkansas Gazette.

Psychologists have decided that gray is the best color for nervous people, but when you are getting nervous over that note at the bank, green is not so bad.—American Lumberman (Chicago).

Supreme Court Decides Highways Are Under Control of Interstate Commerce

On March 2 the United States Supreme Court handed down two decisions that are far-reaching in their importance in the regulation of interstate motor vehicle traffic.

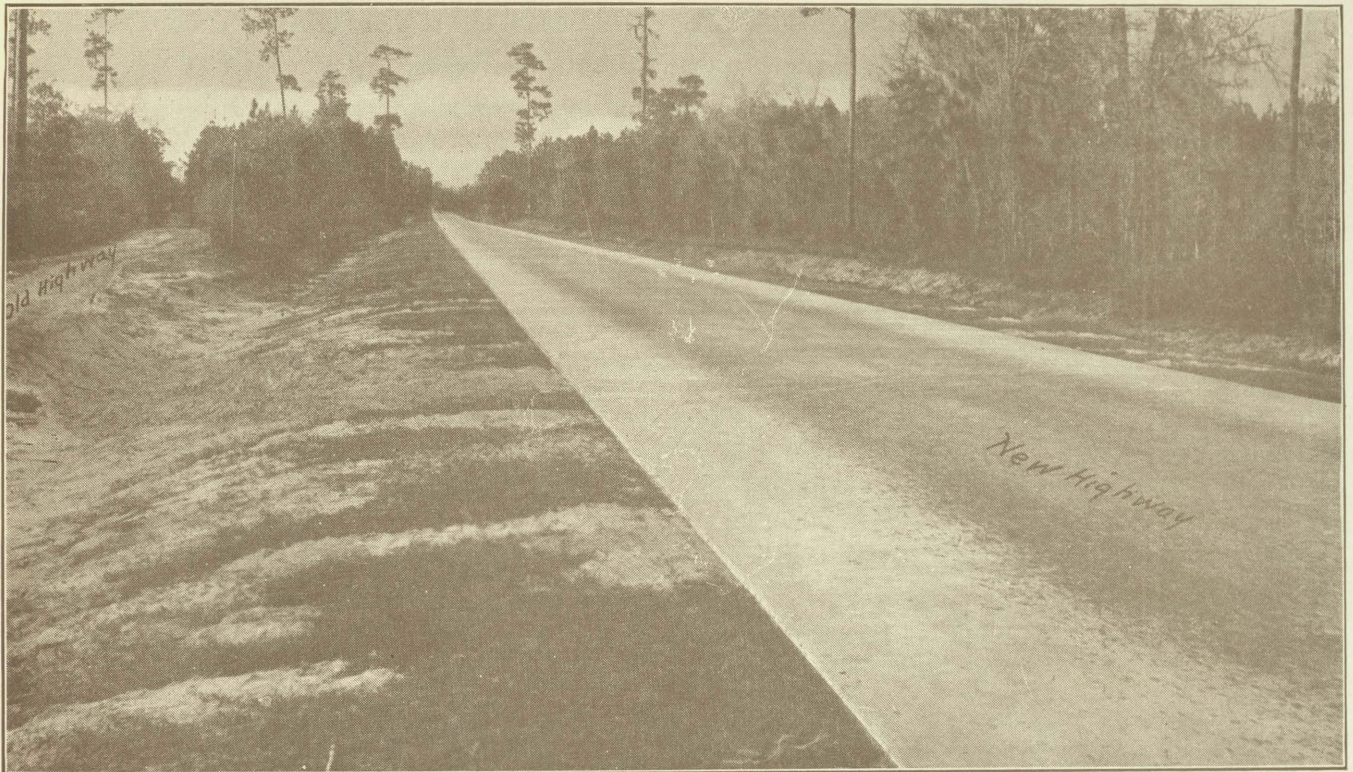
In one decision from the State of Washington the court held that the State could not refuse to authorize license for motor busses over that section of the Pacific Highway lying within its borders. The court stated that States must not impose unreasonable burdens upon interstate motor vehicula traffic.

The other decision in reference to a case from Maryland, the court decided that the State could not decline to permit motor vehicles to use its highways. The State has authority to make regulations

primarily to promote safety and conservatism in their use, but could not impose even an indirect burden upon interstate commerce.

No State, either by statute or by regulation through a public service commission, can interfere with interstate traffic on the highways, and in no way can the State invade the Federal control over interstate commerce.

This question will undoubtedly be a very live issue before the next Congress. This point should be borne in mind: Federal control over interstate highways will naturally carry with it Federal responsibility in the construction of those highways.—American Highway.



Federal Aid Project No. 27, Road No. 2, Columbia County. Plain Cement Concrete

National Responsibility For Highways

HIGHWAYS and reforestation should continue to have the interest and support of the Government.—*President Coolidge.*

This is not a subsidy, because every added facility for the transportation of commerce helps to build up the Nation. It means National wealth, National welfare.—*Senator Sterling.*

The first Federal Aid law to get into road building was recommended by none other than Thomas Jefferson.—*Senator McKellar.*

We should consider this problem from the standpoint of National Defense and military preparedness.—*Senator Oddie.*

As the result of Federal Aid the great highways have been practically nationalized, they have ceased to serve only the community or the States.—*Senator Simmons.*

The principle of this legislation is the establishment of national routes, reduced transportation cost of postal service, transportation of farm products to market—products of the manufacturer to the farm.—*Senator Phipps.*

Roads as we are now constructing them promote and develop interstate commerce.—*Senator Smith.*

The Nation must be looked on as a unit. Our policy is wise, is not to be abandoned. There is left no doubt as to what is the policy of the Government as far as Federal Aid to the building of roads goes. It is a nonpartisan movement, or, rather an omni-partisan movement, all parties favoring it.—*Senator Fess.*

Our highways are built by and under the States with such Federal participation as is calculated to assure continuity and articulation.—*President Harding.*

Duties of Field Engineers on Highway Construction

By B. H. PIEPMEIER, Chief Engineer Missouri State Highway Commission, Jefferson City, Mo.

[Editor's Note: The following is the text of the Short Course Discussion for all employes of the Missouri State Highway Department of Construction, dated Feb. 6, 1925.]

Upon the field man rests the burden and responsibility of seeing that all road and bridge work is executed in accordance with the plans and specifications. A uniform quality of output must ever be the goal of effective supervision. It is, therefore, necessary that general policies and standard requirements of the Department be prescribed for the guidance of all field men, to insure uniform practice.

General Supervision

General supervision is carried on by field inspections made by the Engineer of Construction, aided by general inspectors from the central office at Jefferson City. During these general inspections, work is gone over in detail with the resident engineer and criticism and suggestions are made. Conferences are held with the contractor regarding progress. Where wrong practices are found, such suggestions and orders as seem pertinent for correcting the defect, are made to the engineer and the contractor. The general inspectors submit a written report to the division engineer and forward a copy to the Engineer of Construction.

Detailed Supervision by Field Men

The detailed responsibility of seeing that the work is done according to plans and specifications, that it conforms to the specified requirements for quality and quantities rests upon the project engineer. The faithfulness with which the project engineer carries on his supervision determines to a large degree the quality of the contractor's performance. Both contractor and engineer should have at the outset a complete understanding of the plans and requirements of the specifications, to avoid trouble and future misunderstandings.

Project engineers will usually be assigned to projects at least two weeks in advance of construction operations. Project engineers should and are required to locate their headquarters as near the work as is possible. They should familiarize themselves with the particular project and the work contemplated and then take up with the division construction engineer the matter of proper organization for the needed supervision. The necessary assistants, inspectors and rodmen will be assigned as needed. Transportation needed for the satisfactory prosecution of the work will be furnished, but will be as limited as possible. The use of privately owned cars on the basis of 7 to 8 cts. per mile, will be allowed only upon approval of the Superintendent of Equipment, when recommended by the Engineer of Construction.

Project engineers should "size up" with plans in hand and noting in detail their work by going over the ground all conditions. All drainage struc-

tures should be checked for size and length, and prospective borrow pits should be examined to see that they are ample and that sufficient right-of-way has been secured. In general, project engineers should ascertain that the plans are right before construction work begins. Orders for the removal of any poles or structures that will interfere with grading operations should be issued promptly, so that no delays will be incurred. As soon as project engineers establish their headquarters, they should notify in writing their division engineer of their postoffice, telephone and telegraph address. A copy of this letter should be sent to the Construction Bureau at Jefferson City. Project engineers are expected to be on the job at all times while construction work is in progress, and to supervise all operations regardless of the time it takes or the hour in which it is done. If, in an emergency, it is necessary for project engineers to leave their work, they should get permission and relief from their division engineer.

Project engineers are directly responsible to the division engineer for all men under them and for all state equipment assigned to their project. All correspondence relating to the work, equipment or supplies, should be directed to the division engineer.

Setting Stakes

The project engineer should reach his work in time to check the plans and be sure that they are correct before the contractor commences work. Stakes will be furnished by the contractors on all work let after December, 1924. These stakes ordinarily should be set in accordance with the contractor's wishes, as far as plans permit. Ordinarily, in running the centerline, a stake should be set opposite each station (100 ft. intervals) on each right-of-way line to avoid its being disturbed during grading operations. Extreme care should be used in setting and marking these stakes, because they will be used to check slope and finishing stakes that will have to be set later. On curves stakes should be set at intervals of 25 to 50 ft., depending upon the curvature. Generally, unless otherwise requested, the grade marked on a stake should be the finished profile grade. This marking should not show any allowance for earth shrinkage, which varies from 10 to 20 per cent, nor for any rock swell, which varies from zero to 33 per cent.

Slope stakes should be set at the top of all cuts and at the top of all fill slopes over 2 ft. in height. The location of these stakes must be determined by computations based upon standard slopes and upon instrument readings at points where the stake is to be set. The depth of cut or fill is to be marked to the nearest tenth of a foot with reference to the finished profile grade, shrinkage being disregarded.

All curves must be so staked and marked that proper superelevation will be secured. The amount of superelevation required will be shown on the

plans or covered by instructions issued to project engineers.

On earth and gravel roads, finishing stakes and form stakes will ordinarily be set at intervals of 50 to 100 ft. on tangents and 25 ft. on horizontal and vertical curves. They must be set true to grade and alignment. All structures must be carefully staked and tacked for center lines, wing lines, and dimension lines.

Keeping Records

Project engineers are required to keep a diary in a regular note book, recording in detail all happenings of each day, so that such information will be available in settling questions of liquidation

otherwise, the project engineer should make the change on his plans, prepare a change order and submit it at once to the division engineer. On federal aid projects the approval of the federal inspector of such change must be secured; while on state work the approval of the Department's general inspector or of the division construction engineer is required.

A close check must be kept on all construction materials received on the job, so that payments for same can be made as such materials are received and the proper deduction allowed as they are used. Reports on state furnished materials are to be submitted weekly to the Engineer of Materials.

Pay estimates for contractors are to be made



View on State Road No. 2, Federal Aid Project No. 37; Sheet Asphalt.

damages and any other disputed points that may arise in the course of the work.

The progress record will indicate the ability of a contractor to complete his work on time and will, in adverse cases, permit the Department to take such steps as are necessary to finish the work as outlined in the contract.

The weekly report, with all spaces properly filled in, including work up to the end of the weekly period, must be sent in promptly. Send 1 copy for each project to the division office and 1 copy on each bond issue project, and 2 copies on each federal aid project to the Jefferson City office.

Whenever a change is rendered necessary by a mistake in plans, a reclassification of materials, or

monthly and must be accurate in detail and submitted on time. It is important that information in all reports and estimates be correct, as the compilations of such data for statistical purposes is based on these reports and estimates.

General Information

Project engineers and their assistants should refrain from issuing orders or giving instructions to laborers on the jobs. They should talk to the foremen or superintendent first. If that is not effective then the matter should be taken up with the contractor. If this step also fails to secure the desired results, the project engineer should report the matter in detail to his division engineer.

Field men should be very careful about making critical remarks regarding methods and equipment used by a contractor, for unnecessary antagonism is thereby aroused. The Department is interested in securing the desired results and the quality of work called for in the contract rather than in the methods by which results are produced. The project engineer and his assistants are required to watch carefully all materials going into a job. If the materials are questionable, the matter should be taken up with the testing laboratory, even though a satisfactory card was attached to the car in which they were shipped. Measurements of materials going into batches of concrete should be checked independently of the contractor's men.

The dimensions of forms and the placing of reinforcing steel must be checked, as well as the time of mixing a batch of concrete. Checking should be done with a tape, instrument or watch, as judgment by eye is not regarded as being sufficiently accurate. Project engineers should inspect detours often enough to see that route signs and arrows are up and that the traveled way is in good condition.

Project engineers should keep all their records in a note book and not depend upon their memory. Records should be kept up to date, so that at any time a new man coming on the work can take up his duties without confusion or interruption of the supervisory work. All available cost data should be recorded for future estimating of work, in order

to avoid arguments, all orders and instructions should be in writing, especially so when they vary from the plans, specifications and contract.—Municipal and County Engineering.

PRESIDENT COOLIDGE SAYS:

"No expenditure of public money contributes so much to the national wealth as good roads."

The United States now has 84% of all the passenger cars, 74% of all trucks, and 11 per cent of all motor cycles in the world.

The first macadamized road ever built in the United States was the old Lancaster Turnpike, which ran from Philadelphia to Lancaster, Pa.

Believe in highway warning signs. They mean what they say. A voluntary stop at a railway crossing is temporary. Death is permanent.

Land owners may well lead the road improvement crusade. Good roads means more dollars in their pockets, and more pleasure for their families.

Would you prefer to drive on a road rather than in one?

It is all right to stop and think, but it is dangerous to stop thinking—The Nation's Highways.



State Project No. 546, Ojus Rock, surface-treated, Road No. 4, Brevard County

Building Roads to Develop Alaska

By COLONEL JAMES GORDON STEESE, M. Am. Soc. C. E., President and Chief Engineer, Alaska Road Commission, and Director of Public Works for the Territory.

Alaska is rich in natural resources, but needs roads to develop them. The roads are being built, but under great difficulties, as explained in the following article by the engineer directing their construction.

Alaska is essentially a country of bold relief, with glaciers a conspicuous feature of the mountain system. The streams created by the seasonal melting of the glaciers, are among the most annoying obstacles encountered in road construction.

Nearly everywhere, the ground is permanently frozen to within a foot or two of the surface. It is practically impossible to proceed with wheeled vehicles anywhere without some form of prepared wagon road. Except where the frozen surface of a river is used, it is necessary to clear a trail even for dog teams. Many streams remain open all winter and must be bridged.

In road construction, the cruising, clearing, grubbing, thawing out, grading and surfacing includes all work done upon the roads in settled parts of the United States from pioneer days. In Alaska, the ground must be thawed out and a drainage system created. The need for some form of overland transportation is met first by the use of sled roads and trails. These provide a means of penetrating inaccessible country and of bringing it into a stage of development warranting the heavier cost of construction of a graded and surfaced wagon road.

When the right of way is first cleared and exposed to the sun's rays, the resultant thawing creates a veritable bog. A great deal of corduroy is necessary in the low spots. Innumerable box culverts of spruce logs must be placed as the entire adjacent country immediately drains into the deep and wide ditches necessary to dry out the subgrade. After several years, the water table is permanently lowered, the subgrade is thawed out deep enough to give stable support to the gravel surface and the box culverts have rotted out. Two-thirds of them may now be filled in and the other third replaced by corrugated metal culverts.

Here the matter of supply becomes important. On the Richardson Highway, 320 miles from Chitina on the Copper River & Northwestern Railway to Fairbanks on The Alaska Railroad, metal culverts have now been distributed for 90 miles out of Fairbanks and 150 miles out of Chitina. On the Valdez end, they have been hauled from the coast over the Chugach Mountains through Thompson Pass at an elevation of 2,750 feet. Many hundreds more will be required to complete the job. In other parts of Alaska, they are hauled by dogs.

Some time ago The Alaska Railroad was completed to the Tanana River and connected up with the narrow gauge section centering on Fairbanks. Since then the narrow gauge has been standardized as far

as Fairbanks. As a result, the transportation situation in the interior has been changed radically. Instead of an entire year's supplies being landed by boat during the short summer, with the attendant high cost for investment, insurance, storage, depreciation, etc., supplies are now landed twice a week all the year round to the entire railroad area.

The far interior still has to provide for itself for an entire year at a time, but such supply is now based upon the railroad area instead of a south coast port or Seattle. The Alaska Railroad, therefore, with its river boat service, and tributary highways and trails, is the backbone of Alaska's transportation system, which, by river, rail, highway, or trail, reaches to all inhabited districts.

During the opening of the new diggings in the Chisana region a few years ago, beans, coffee, sugar, hay, candles, bacon, grain, etc., were sold at \$1.50 a pound. The freight charges were almost a dollar a pound, so that the original cost of the article was of relatively little importance. And even at that, the supply could not keep pace with the demand. Last summer the freight charges for transporting supplies from Dawson in the Klondike, to some mines about one hundred miles away in the American 40-Mile District, was greater than the original cost of the supplies plus the freight, from the United States to the Klondike. (Dawson is 1,700 miles from Seattle.)

At Lisianski Inlet, in southeastern Alaska, in 1921, I observed lumber, pipe, tar paper, groceries, etc., being carried on the backs of Indians from the beach up a slippery mountain trail about 7,500 feet long to a new gold strike in a little basin at about 800 feet elevation at 4 cents per pound, or \$80 per ton—over one cent per ton-foot.

Railroad transportation cannot yet be regarded as a usual form for Alaska, and steamship rates are entirely arbitrary, depending upon competition. They, like the existing railroad rates, have been fixed by two factors only: 1st, the cost of hauling on some competing wagon road, sled road, or trail, where such competition exists (or, in the case of steamships, sometimes by competing steamer line); and 2nd, by the highest rate the freight can stand and be shipped at all.

The total mileage of roads and trails constructed or maintained by the Commission aggregates 9,624¾ miles consisting of 1497¾ miles of wagon road, 1,088½ miles of sled road, 6,326½ miles of permanent trail and 712 miles of temporary flagged trail.

During the past year the work may be summarized

as follows: New construction, 34½ miles wagon road, 96½ miles of sled road, 280 miles trail, and 1,234 lineal feet of bridges of over 60 foot span; Improvement, 20½ miles wagon road reconstructed, 53¼ miles wagon road graveled, 42 miles Nome-Shelton Tramway opened for traffic, and innumerable small bridges and culverts rebuilt; Maintenance, 1,151 miles wagon road, 661 miles sled road, 3,598 miles permanent trail, and 477½ miles temporary flagged trail.—The Highway Magazine.

PROLONGING THE LIFE OF RUBBER TIRES

The valuable properties of vulcanizing rubber depend, as is well known, upon the addition to the rubber of a small amount of sulphur and upon the heating of the combination to a certain temperature. The deterioration of the vulcanized rubber by hardening and cracking is a chemical process due to the combustion of the sulphur. At ordinary atmospheric temperatures the sulphur slowly but surely oxidizes. The increasing temperature to which pneumatic tires are subjected hastens this action.

Dr. G. Niese, in the Allgemeine Automobil Zeitung, states that the oxidizing action is effectively checked by a preparation, Sparegum, marketed by a Leipzig firm. Its action depends upon a negative catalyst which greatly retards the aging process, almost eliminating it. The product is to the tire

what leather preservative is to shoe leather.—Compressed Aid Magazine.

"There was a young man of Devizes,
Whose ears were of different sizes;

The one that was small

Was no use at all,

But the other took several prizes."

—Living Church.

USE FOR OLD INNER TUBES

Old inner tubes may be used for making floor mats. The old tubes are first cut into strips, says The Automobile Digest, by wetting the rubber and cutting with an old razor. The strips are then woven or interlaced with each other, in basket fashion. The end strips are made double width and turned over, and then cemented in place. Brass rivets placed along the edges will improve the appearance, in addition to making the mat stronger.—Ex.

Shakespeare Up-to-Date

"Shakespeare anticipates everything."

"What now?"

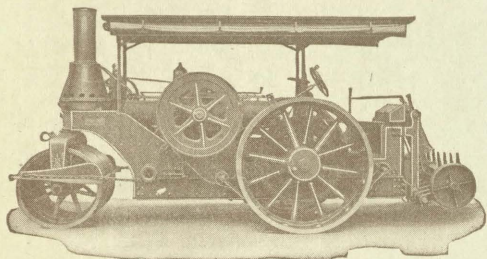
"His advice to the Senate—'Nor wear your heart upon your sleeve for Dawes to peck at'."—Louisville Courier-Journal.



A scene of typical Central Florida Beauty on State Road No. 2

BUFFALO-SPRINGFIELD ROLLERS

The choice of experienced
engineers and contractors



Furnished in all weights and types—
motor and steam propelled.
Inquiries Invited.



The Buffalo Springfield Roller Co.
Springfield, Ohio.



Jacksonville Agent
M. D. Moody, 402 Masonic Temple

Concrete Rock Announcement

Opening of our quarry on or about June 1st at Camp, Florida, four miles East of Brooksville on the Atlantic Coast Line Railroad for the production of washed and sized concrete rock. Capacity 1500 to 2000 tons daily. Inquiries solicited.

C. & J. CAMP

OCALA, FLORIDA

Sales Office: 1011 Bisbee Bldg., Jacksonville, Fla.

TRANSACTIONS OF BUDGET MEETING OF STATE ROAD DEPARTMENT

(Continued from page twelve)

and is particularly described as follows, to wit:

Beginning 244 feet east of a point on the north and south line between Sections 9 and 10 and the north property line of the Ojus Rock Company in Township 52, south, Range 42 east, being a strip of land 66 feet wide whose center line commences at survey Station 108+04, which is the point above described running south 14° 45' west, a distance of 2,119 feet, the east and west line of which shall be parallel and 33 feet each side of the center line of State Road No. 4 as now located through the said Sections 9 and 10 of Township 52, south, Range, 42 east; all in Dade county, Florida.

The estate in said property hereby authorized to be acquired is an estate in absolute fee simple.

Be It Further Resolved, That all proper and necessary proceedings for the acquiring of the above-described property by such eminent domain are hereby authorized, and the Chairman of the State Road Department and its attorney are hereby authorized to prepare and sign all necessary pleadings and to take all necessary steps and actions required by the statutes of the State of Florida.

Resolution of Appreciation

Upon motion of Mr. Corry, seconded by Mr. Green, the following resolution was adopted:

Resolved, That the thanks of this Department be extended to the City Manager and City Commission-

ers of the City of Miami, Florida, for their courtesy in permitting the State Road Department the use of the City Hall for holding the annual Budget meeting in their beautiful city; and

Be it Further Resolved, That this Department extends its thanks to the chairman and members of the Board of County Commissioners of Dade county for the many courtesies extended to the Road Department while in their midst and for their delightful banquet tendered the Department during its sessions.

Upon motion, duly carried, the expense accounts of the members are hereby approved and ordered paid.

Leave of Absence to Attorney

On motion of Mr. Corry, seconded by Mr. Green, the following resolution was adopted:

Be it Resolved, That from and after April 6, 1925, the employment of B. A. Meginniss as Attorney for the Department be, and the same is hereby discontinued until June 6, 1925.

There being no further business, the Department adjourned.

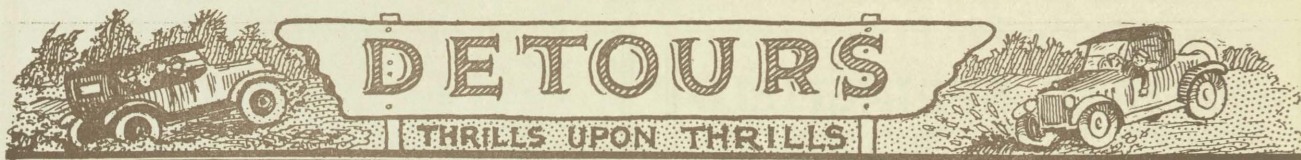
Borrowing As a Fine Art

"Hullo, Brown. Are you using your lawn-mower this afternoon?"

"Yes, I am afraid I am."

"Splendid! Then you won't be wanting your tennis racket—I broke mine!"—Humorist (London.)

All hail to the national road-builder. When he's good, he's usually excellent.



Juggling With Life and Death

A man with an uncanny mania for juggling with figures produced pencil and paper and said to a friend: "Put down the number of your living brothers. Multiply it by two. Add three. Multiply the result by five. Add the number of living sisters. Multiply the result by ten. Add the number of dead brothers and sisters. Subtract one hundred and fifty from the result." The friend did it. "Now," said the other with a cunning smile, "the right-hand figure will be the number of deaths, the middle figure the number of living sisters, and the left-hand figure the number of living brothers." And so it was.—Tit-Bits (London).

Truth is stranger than fiction. It doesn't come around as often.—Columbia Record.

En Route

Speaking of "white mule," two rustic sports were uncertainly flivvering their way home from the country seat.

"Bill," said Henry, "I wancha to be very careful. First thing y'know you'll have us in the ditch."

"Me?" said Bill in astonishment. "Why, I thought you was driving."—Jester.

Cloth manufacturers must live. So the material taken from the girls' skirts is added to the men's pants.—Buffalo Post.

Paraguay reports the discovery of something claimed to be 200 times sweeter than sugar; but neglects to mention her name.—Detroit News.

Styles in the Hereafter

A revival was raging in a Virginia colored church. The fruits had been considerable. One obdurate soul, however, resisted the efforts of the elder. Called to account for his reluctance, he replied:

"Yo' see how it is, Elder. I'se got a problem. I don't see how I'se gwine git mah shirt on ovah mah wings when I gits to Glory."

"Dat ain't yo' problem," retorted the exhorter promptly. "Yo' problem is how is yo' gwine git yo' hat on ovah yo' horns."—Everybody's Magazine.

The Making of a Hero

"Miriam," he said, "I have seen the doctor. He tells me I must give up all smoking at once. It's imperative, he says; one lung is already nearly gone."

She flinched, a look of agony came over her pale, young face.

"Oh, Honey, can't you hold out a bit longer until we've coupons for a new rug?"—Crescent.

Wester poorhouse refused to admit a man because he owned an automobile. Which is somewhat like a hospital refusing to admit a man because he is sick.—Little Rock Arkansas Gazette.

A recent writer says that a musician should understand botany, geology, and astronomy. Incidentally, he should know something about music.—Cleveland Plain Dealer.

Crums of Comfort

"Mr. Chairman," complained the speaker, stopping in his address, "I have been on my feet nearly ten minutes, but there is so much ribaldry and interruption, I can hardly hear myself speak."

"Cheer up, guv'nor," came a voice from the rear, "you ain't missin' much."—Capper's Weekly.

When All the World Was Wet

The objector to Prohibition spoke bitterly. "Water has killed more people than liquor ever did."

"You are raving," declared the teetotaler. "How do you make that out?"

"Well, to begin with, there was the flood!"—Pittsburgh Sun.

A Limit to His Patience

"The office should seek the man, you know."

"Yes, that's all right," replied the candidate, "but I gave it plenty of time, and it seemed bashful."—Denison Flamingo.

And Still Less Would Do

Judge—"Have you anything to say, prisoner, before sentence is passed upon you?"

Prisoner—"No, your lordship, except that it takes very little to please me."—Answers.

Blind Beggar's Day Off

The benevolent old lady was about to drop her usual coin in the hat of the blind beggar at the corner. "You don't seem to be the same man who sits here always," she remarked. "No, lady, he's my brother." I hope your brother is not ill," she went on. "Oh, no, mum," was the unexpected answer. "He's taken an afternoon off an' gone to the movies."—Boston Transcript.

Help

"What's the excitement in the Congressional Library?"

"Seems a Congressman wandered in."—Louisville Courier-Journal.

Off the Square

Clubman—"Have a game of chess, Brown?"

Cross-word Victim—"No, my doctor has forbidden me to look at anything with squares on."—The Passing Show (London).

Encouraging

Sign in a Chicago neighborhood restaurant:—"Don't be afraid to ask for credit. Our refusal will be polite."—The Christian Register.

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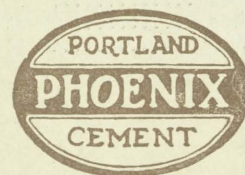
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1,500,000 bbls.
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(To be con-
structed)
New Orleans,
La.

Status of Road Construction

THROUGH FEBRUARY 28TH, 1925

Project No.	Contractor.	Road No.	County	Total Length Miles	Clearing Miles	Grading Miles	Base Miles	Surface Miles	Per Cent Type Complete
26	C. F. Lytle.....	2	Columbia	11.01				0.00	C. 0.00
37-D	Fla. Drainage & Const. Co..	2	Alachua	2.14	0.00	.63			G. 31.00
40-A	C. F. Lytle.....	4	Brevard	16.17	15.52	12.12	8.41	0.00	S.T. 60.00
40-D	J. Y. Wilson.....	4	Brevard	6.72	6.72	6.72	6.72	0.00	S.T. 99.00
40-E	Langston Const. Co.....	4	Brevard	13.60	13.60	13.60	12.10	0.00	S.T. 94.80
43	Wm. P. McDonald Const. Co.	2	Marion	10.44	10.44	8.35	.52	0.00	S.A. 16.20
44	Southern Paving Const. Co.	2	Lake	10.53	10.53	9.48	10.32	5.79	B.C. 77.53
514	State Forces	1	Jackson	11.00	0.00	0.00		0.00	S.C. 3.80
534-A	J. D. Donahoo & Sons.....	24	Brevard	2.65	2.65	2.17	0.00	0.00	S.T. 82.00
534-B	Noll & Noll.....	24	Brevard	11.85	11.85	11.85	7.58	0.00	S.T. 62.00
564-A	Edgar Chapman, Broadbent Const. Co.....	5	Charlotte	10.88	10.33	7.07	2.72	0.00	S.T. 58.00
564-B	Boone & Wester.....	5	Charlotte	9.86	9.86	9.86		7.89	Marl 95.00
567	State Forces	1	Walton	21.35	17.50	7.04		3.41	S.C. 36.50
571	Hunter & Gladwell.....	1	Madison	14.73	14.73	14.58		7.66	S.C. 89.00
574	Duval Engr. & Const. Co...	9	Madison	11.66	11.66	11.66	1.86	0.00	S.T. 37.00
576	S. T. Buchanan & Broadbent Const. Co.....	5	Sarasota	5.68	5.68	5.68	2.84	0.00	S.T. 50.00
586	State Forces	1	Jackson and Washington ..	17.37	11.29	8.68		5.56	S.C. 63.50
588	Morgan-Hill Paving Co.....	8	Putnam	2.34	1.17	0.00	0.00	0.00	S.A. 1.50
595	State Forces	3	Volusia	6.42	0.00	0.00	0.00	0.00	S.T. 0.00
597	J. Y. Wilson.....	4	Volusia	16.29	16.29	12.70	.65	0.00	S.T. 28.60
598-A	W. J. Bryson Paving Co....	1	Jefferson	9.45	9.45	9.45		5.67	S.C. 98.00
598-B	State Forces	1	Jefferson	7.80	7.80	7.02		6.63	S.C. 83.00
599	M. M. Boyd.....	2	DeSoto-Charlotte.	7.40	7.40	7.35		7.18	Marl 99.00
604	C. F. Lytle.....	4	Volusia	7.72	6.64	3.86	2.85	0.00	S.T. 51.60
607-B	State Forces	13	Clay	5.68	5.68	4.82	0.00	0.00	S.T. 32.00
608	C. F. Lytle.....	4	Brevard	9.25	8.32	6.47		1.11	C. 27.30
612	State Forces	1	Leon	17.58	15.82	12.30		3.69	S.C. 60.92
613	State Forces	5	Sarasota	4.62	4.16	.55	0.00	0.00	S.T. 3.00
621	State Forces	1	Okaloosa	15.17	0.00	0.00		0.00	S.C. 0.00
623	State Forces	35	Madison	12.32	3.94	3.08		0.00	S.C. 15.90
627	State Forces	2	Putnam	3.70	2.96	1.26	0.00	0.00	S.T. 10.46
628-D	State Forces	3	Volusia	6.47	6.14	4.53	0.00	0.00	S.T. 17.10
630	Myers Construction Co.....	8	Highlands	11.00			4.40	0.00	S.T. 40.00
633	State Forces	1	Gadsden	9.61	0.00	0.00		0.00	S.C. 0.00
634	State Forces	1	Jackson	11.07	5.53	3.32		1.10	S.C. 34.10
636	C. F. Lytle	8	St. Lucie	12.20	0.00	0.00	0.00	0.00	S.T. 0.00
637	State Forces	10	Leon	18.08	0.00	0.00		0.00	S.C. 0.00
639	State Forces	1	Gadsden	9.84	0.00	0.00		0.00	S.C. 0.00
646	Newell Contr. Co.....	10	Franklin	18.50					

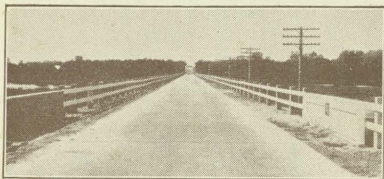
TOTAL MILES COMPLETE

	Concrete	Brick	B.C.	S.A.	B.M.	Asp. Blk	S.T.	S.C.	Marl	Grad.	Total
Complete January 31, 1925.....	107.63	12.44	6.96	42.39	71.50	23.20	257.08	308.57	37.01	20.10	886.88
February, 1925	1.14		1.41	.27			12.92	3.90			19.64
Total to date.....	108.77	12.44	8.37	42.66	71.50	23.20	270.00	312.47	37.01	20.10	906.52

	Clearing Miles.	Graded Miles.	Base Miles	Surface Miles.
Complete January 31, 1925.....	1,013.02	962.46	337.23	888.53
February, 1925	5.39	9.71	13.83	7.68
Total to date	1,018.41	972.17	351.06	896.21

Note—The above tabulation shows only those projects that are actually under construction at the present time and does not show projects that have been previously completed. However, the table, "Total miles completed," at the foot includes all projects that have been completed prior to February 28, 1925, and the amounts completed in February also. The abbreviations used are as follows:

C.—Concrete. S.A.—Sheet asphalt. B.M.—Bituminous macadam. R.—Rock base. S.C.—Sand clay. G. & D.—Graded and drained. S.T.—Surface treated. B.C.—Bituminous concrete.



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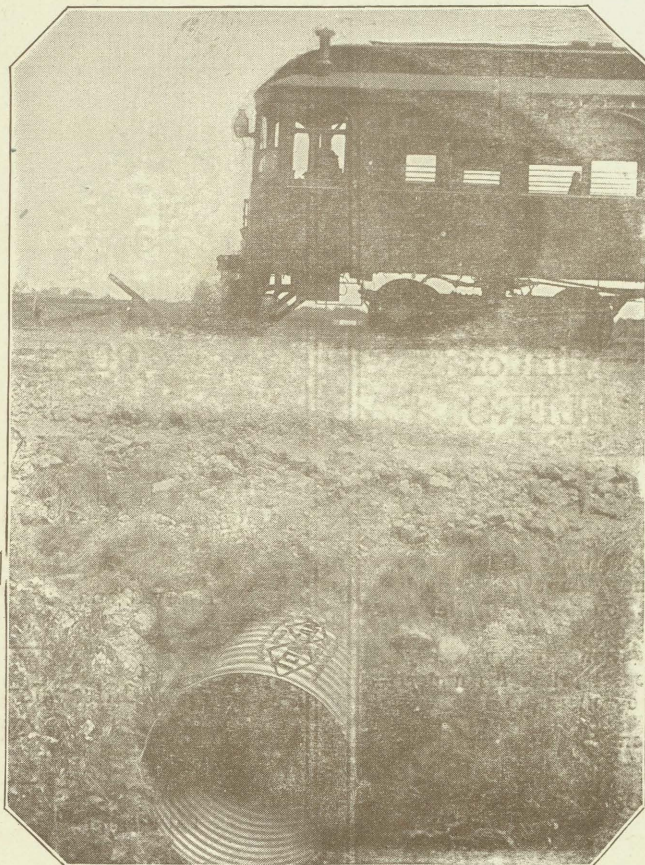
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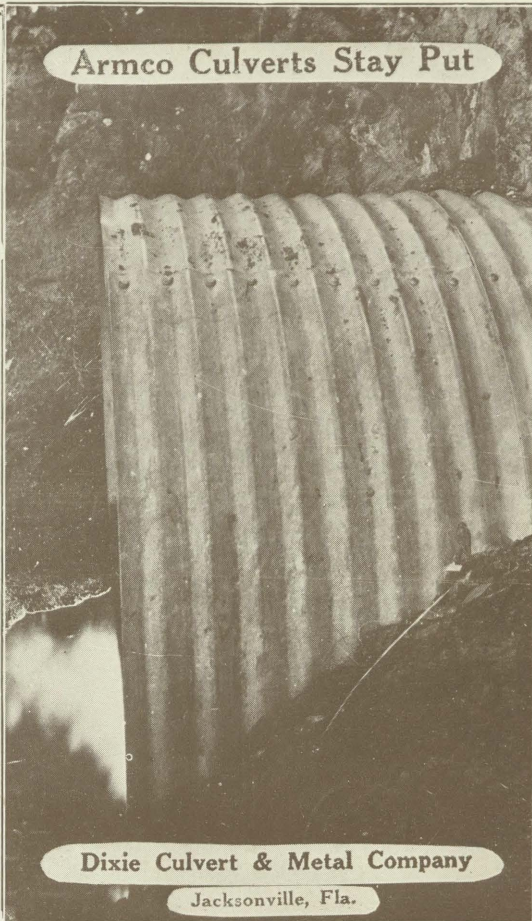
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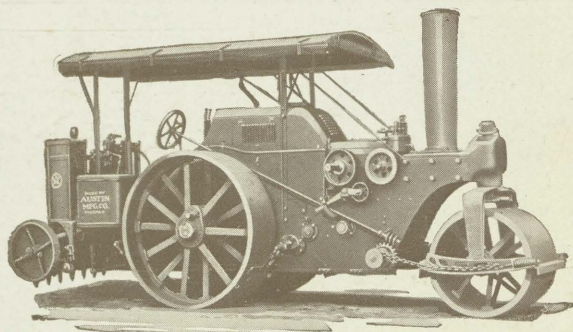
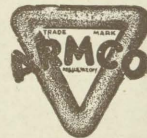
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